



Distinguished Lecture Series



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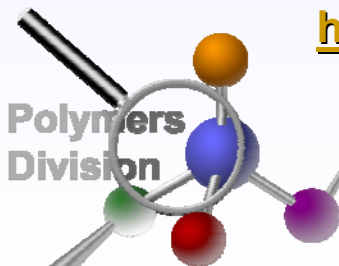
Hydrogel Niches Designed To Promote Tissue Regeneration

Hydrogels provide a unique, largely aqueous environment for 3D cell culture and, when locally modified with appropriate signaling molecules, these synthetic niches can facilitate the regeneration of tissues. While the gel environment is often >90% water, the microscopic architecture and local chemistry play important roles in dictating cell morphology, proliferation, and differentiation; gel degradation and erosion; and the secretion and distribution of extracellular matrix molecules. This talk will illustrate several examples where the regeneration of neotissue structures is highly coupled to the biophysical and biochemical properties of the gels and demonstrate how appropriate tuning of the gel properties can create microenvironments that simply *permit* cells to function to those that actively *promote* specific cell functions. Integral to this understanding is the ability to manipulate the underlying gel chemistry and properties through the synthesis of macromolecular precursors and control of the gelation process.



**Thursday, May 24, 2007
11 AM, Building 224, Room B-245**

**<http://polymers.nist.gov/distinguished>
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